**SUMMARY**

## USC ID/s:

3767844429

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| M+N | Time in MS (Basic) | Time in MS (Efficient) | Memory in KB (Basic) | Memory in KB (Efficient) |
| 16 | 0.06389617919921875 | 0.17881393432617188 | 10976 | 12016 |
| 64 | 0.6361007690429688 | 1.9850730895996094 | 11248 | 12176 |
| 128 | 2.3508071899414062 | 7.283210754394531 | 11552 | 11696 |
| 256 | 9.13095474243164 | 23.714065551757812 | 11184 | 12448 |
| 384 | 19.037961959838867 | 47.94001579284668 | 11696 | 12480 |
| 512 | 31.6159725189209 | 81.77804946899414 | 11696 | 11872 |
| 768 | 65.34814834594727 | 178.1461238861084 | 12416 | 12496 |
| 1024 | 110.83698272705078 | 306.0750961303711 | 13488 | 12320 |
| 1280 | 172.868013381958 | 501.6160011291504 | 15056 | 12272 |
| 1536 | 243.7739372253418 | 684.2639446258545 | 16672 | 12576 |
| 2048 | 433.01892280578613 | 1207.2718143463135 | 20736 | 12784 |
| 2560 | 680.4287433624268 | 1871.5667724609375 | 26496 | 12528 |
| 3072 | 957.3462009429932 | 2663.3288860321045 | 31728 | 12272 |
| 3584 | 1332.270860671997 | 3623.5570907592773 | 29408 | 12672 |
| 3968 | 1649.3370532989502 | 4458.108901977539 | 20624 | 13136 |

9521202331

## Datapoints

## Insights

### Graph1 – Memory vs Problem Size (M+N)

Chart, line chart

Description automatically generated

#### Nature of the Graph (Logarithmic/ Linear/ Exponential)

Basic: Polynomial (blue)

Efficient: Linear (orange)

#### Explanation:

Basic: Algorithm requires m x n memo table.

Efficient: Algorithm requires 2 x m memo table.

### Graph2 – Time vs Problem Size (M+N)

Chart, line chart

Description automatically generated

#### Nature of the Graph (Logarithmic/ Linear/ Exponential)

Basic: Polynomial (blue)

Efficient: Polynomial (orange)

#### Explanation:

Basic: Algorithm requires m x n operations.

Efficient: Algorithm requires constant x m x n operations.

## Contribution

(Please mention what each member did if you think everyone in the group does not have an equal contribution, otherwise, write “Equal Contribution”)

3767844429: Equal Contribution

9521202331: Equal Contribution